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10/798,309	03/12/2004	Nobuhiro Ishizaka	00862.023514.	5783

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EXAMINER	
DICKERSON, CHAD S	
ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/798,309	ISHIZAKA ET AL.	
	Examiner	Art Unit	
	CHAD DICKERSON	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 March 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 11-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 11-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 4-6 have been considered but are moot in view of the new ground(s) of rejection. The amendment to the claims has necessitated a new ground(s) of rejection. However, the references of Watanabe '289, Iwasaki '403 and Clark '856 are still being applied to the claims. The Examiner believes that the claim amendment is still disclosed by the previously applied references. In Applicant's arguments, the Applicant asserted that the combined references did not perform the features of 1) having block data sequentially input that represents a plurality of color component data, 2) an end code at the end of the color component data and 3) memory partition into a first region in accordance with a scanning direction of a print head and a second region on the basis of the code determined by an acquisition means. The Examiner respectfully disagrees with these assertions.

Regarding the third assertion, when reviewing paragraph [0127] the storage control means amendment appears to be new matter. This paragraph specifically states," *As shown in FIG. 5B, the data decompression block 55 reads out three data 'compression TAG', 'data', and 'color change code' from the reception buffer 2, and executes data storage control on the basis of these data*." Also, when reviewing paragraph [0124], a color change signal is present in the data even when no data exists within a print data block pertaining to a certain color. Thus, this piece of code does not necessarily signal a specific color, but simply an end of a data block even if that block

does not have any data. Therefore, in order to organize the print data in the print buffer by color three different types of data are needed: compression tag, data and color change code. The specification does not mention performing storage control simply utilizing the color change code alone, and that is why this is considered as new matter.

Despite the above facts of considering the above feature as new matter, the Examiner still believes that the Iwasaki '403 reference reads on the claims. When viewing figure 6, the host computer sends print data separated into different colors in coded form to the printer device. The printer analyzes the code sent from the host and stores the different color code data, based on analyzing the transmitted code, and stored this information into buffers related to the specific color[1]. The code data also informs the system of the last part of the specific color data to be stored in the buffer. Additionally, it is known that the image data is stored in the buffers at identical print positions in the main scanning direction, which is similar to the Applicant's buffer being arranged with a first region[2]. Therefore, with the system storing data based on a code that signifies the size of the data in the buffer and having the buffer arranged in a similar manner as the main scanning printing direction, the Examiner believes that the storage control limitation is performed.

Lastly, regarding the first two assertions, the Examiner would like to briefly state that the main reference of Watanabe '289 sequentially inputs block data into the printer

[1] See Iwasaki '403 at col. 7, ll. 27-65.
[2] Id. at col. 7, ll. 66-col. 8, ll. 53.

unit for output[3]. The Clark '856 reference discloses a code that represents the end of color component data that is performed through the DMA interrupts[4].

Therefore, in view of the above explanations, the Examiner believes that the claim language is disclosed by the applied references.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 1 and 11-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not mention performing storage control simply utilizing the color change code alone, which is why claim 1 is considered as new matter. Claims 11-13 are also rejected based on their dependency.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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[3] See Watanabe '289 at col. 3, ll. 47 – col. 5, ll. 64.
[4] See Clark '856 at col. 6, ll. 20-col. 7, ll. 58.

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe '289 (USP 5689289) in view of Iwasaki '403 (USP 6328403) and Clark '856 (USP 7265856).

Re claim 1: Watanabe '289 discloses a printing apparatus that prints by scanning a print head with regard to a printing medium (i.e. the system discloses the printing head recording information onto a medium in a scanning direction; see col. 3, ll. 9-14),

a print buffer for dividing storage area into a plurality of first regions in corresponding with scan direction of the print head (i.e. the print buffer is used to store column data that has been recently converted to vertical data and this information is then printed as it is stored in the print buffer. The print buffer is stored in RAM (312) of the recorder (311). Here, the print buffer stores the vertical information of a plurality of column amounts for printing and another column amount stored for the next scan. The data storage capacity of the printer buffers correspond to the area to be recorded by a single main scan of the recording head. With the printer buffers being stored in RAM (312) and the RAM, considered as the printer buffer, being divided into two buffers, the Examiner believes that the storage area of the RAM is divided into a plurality of first regions; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8 and col. 11, ll. 1-46),

input means for sequentially inputting block data corresponding to the first regions (i.e. the system contains a 4-line buffer, considered as an input means, that can store four lines of converted image data that has been decoded by a programmed process of the CPU (111). The decoded data represents data that is dot image data, considered as a raster, and this data is stored in the 4-line buffer. There are one-line representations that are decoded into a dot image, or a raster, stored in the 4-line buffer and the 4-line buffer is able to store 4 lines, two after resolution conversion and two lines before resolution conversion. The 4-line buffer is able to then contain a plurality of rasters when storing these lines. While the receiver buffer (202) receives data of one line from the 4-line buffer, the receiver buffer receives data sequentially from the 4-line buffer if the receiver buffer is empty. Therefore, the sequential transfer of data from the 4-line buffer to the receiver buffer is performed. Also, since the image data of one line of an overall image is stored in the 4-line buffer, the divided regions of an overall image are used to be transferred to the receiver buffer. Lastly, with the data being expanded into dot image data and then, the dot image data being encoded again while being stored in the image buffer (104), this performs the feature of having dot image data, or a plurality of raster data, being encoded, or compressed; see col. 3, ln 47 – col. 5, ln 64),

acquisition means for reading block data from the input means and for acquiring data from the block data by decompressing the compressed data (i.e. the raster buffer, which can be considered as apart of the acquisition means or printer unit (200, fig. 3), receives, or acquires, lines of memory with a certain bit value (8x3640 bits) from the centronics sender. Specifically mentioned in column 4, lines 6-65, the raster buffer is

used to decode, or decompress, data stored on the receiver buffer (202). Also, the programmed processing of the CPU1 (111, fig. 3) decodes data that is stored in the image buffer. The data is analyzed in order to determine if text or image data is being processed and this data is forwarded to the text buffer or raster buffer. In addition, CPU1 (111) can also be considered as the acquisition means since this controller acquires or reads data from the 4-line buffer and decompresses this information into a bitmap; see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8);

storage control means for assigning block data to a first region of the print buffer and for storing the data acquired by the acquisition means in second regions (i.e. the print buffer stores the vertical, or column data, transferred from the horizontal-to-vertical converter. The print buffer has 8 lines that represent 8 separate lines or regions of the print data that is stored in the print buffer. If print data is being output from the print buffer 1 (205), the system then transfers column data information to be printed to the memory spaces within print buffer 2 (206); see figs. 3-6 and 8; col. 3, line 47 – col. 8, line 8).

However, the reference of Watanabe '289 fails to teach *the preamble limitation of a printing apparatus that prints by scanning a print head, which has a first nozzle array for ink of a first color and a second nozzle array for ink of a second color different from the first color*, a print buffer for dividing storage area into a plurality of first regions in corresponding with a scan direction of the print head, each first region being divided into a plurality of second regions in correspondence with color components, wherein the block data contains first color component data corresponding to the first color and/or

second color component data corresponding to the second color, for determining the code and storage control means for assigning block data to a first region of the print buffer and for storing the data acquired by the acquisition means in second regions of the first region on the basis of the code determined by said acquisition means.

However, this is well known in the art as evidenced by Iwasaki '403. Iwasaki '403 discloses *the preamble limitation of a printing apparatus that prints by scanning a print head, which has a first nozzle array for ink of a first color and a second nozzle array for ink of a second color different from the first color* (i.e. since this is a preamble limitation that is not recited in the body of the claim nor does it give any life or meaning to the overall claim, it is not given any patentable weight. However, in the interest of compact prosecution, the Examiner would like to mention that the Iwasaki '403 reference contains the above feature by containing nozzles within print head cartridges as shown in figure 26. In figure 3A and 3B, a nozzle array is illustrated and figure 26 has several print heads that are of a different color next to one another; see col. 16, ll. 14-36),

a print buffer for dividing storage area into a plurality of first regions in corresponding with a scan direction of the print head (i.e. the invention discloses buffer areas within the RAM that store information particular to each color represented in an image. Figures 4, 7 and 13 show rasters stored within the buffers pertaining to the particular colors and these rasters are at identical print positions in the main scanning direction as 1-byte data. When viewing figures 7 and 13, the image data is printed at a position on the paper that mirrors the raster position stored within the print buffers; see col. 7, 56-col. 8, ll. 16),

each first region being divided into a plurality of second regions in correspondence with color components (i.e. like the Watanabe '289 reference, the Iwasaki '403 reference discloses a printing device receiving image information to process and print (same field of endeavor). However, shown in figures 7, 11 and 13, the RAM stores buffers associated with a particular color. When viewing figure 7, the layout of the print nozzles within a print head of a color ink-jet printer is displayed. In addition, figure 13 represents the first region stored in the print buffer that represents the first block of data. The 16 columns are divided into 4 colors and the first three bytes are black, the next three are cyan, etc. These represent a memory with a first region of 16 bytes or columns to by divided into separate color regions within a buffer; see col. 7, line 13 – col. 9, line 45),

wherein the block data contains first color component data corresponding to the first color and/or second color component data corresponding to the second color (i.e. the system of Iwasaki discloses print codes that are considered analogous to color component data since the print codes can represent multiple colors that are to be used in the page output; see col. 7, line 13 – col. 11, line 56),

for determining the code (i.e. in the system of Iwasaki '403, the print codes are analyzed and are determined by the code analyzing means (616). When the codes are determined, a signal is given to the developing means to develop the data in order to be stored in the print buffers; see col. 7, line 16 – col. 11, line 56) and

storage control means for assigning block data to a first region of the print buffer and for storing the data acquired by the acquisition means in second regions of the first

region on the basis of the code determined by said acquisition means (i.e. the system of Iwasaki discloses storing data in a storage means based on the code analyzed and determined to be a specific type of information. The overall print buffer is made up of the four different color buffers. The sixteen bytes in figure 13 represent the scan direction of the print head as seen in figure 7. The memory shown in figure 13 shows different columns stored in the overall buffer in a manner that when printed mimics the print positions in the main scanning direction. With the first region being the overall printing direction of the bytes within the print buffer, the data from the rendered printed codes stored in their respective portions within the buffer are considered as data stored within the second regions of the first region; see col. 6, ll. 16-38 and col. 7, line 13 – col. 9, line 46).

Therefore, in view of Iwasaki '403, it would have been obvious to one of ordinary skill at the time the invention was made to have the features of a print buffer for dividing storage area into a plurality of first regions in corresponding with a scan direction of the print head, each first region being divided into a plurality of second regions in correspondence with color components, wherein the block data contains first color component data corresponding to the first color and/or second color component data corresponding to the second color, for determining the code and storage control means for assigning block data to a first region of the print buffer and for storing the data acquired by the acquisition means in second regions of the first region on the basis of the code determined by said acquisition means, incorporated in the device of Watanabe '289, in order to store color information within a print buffer in RAM and having the

storage position be identical to the print positions of the image data in the main scanning direction (as stated in Iwasaki '961 col. 8, lines 1-9).

However, the combination of Watanabe '289 in view of Iwasaki '403 fails to teach a code representing an end of the first color component data and the second color component data, respectively, and wherein each color component data has compressed data.

However, this is well known in the art as evidenced by Clark '856. Clark '856 discloses a code representing an end of the first color component data and the second color component data, respectively (i.e. Like the previously applied references, Clark '856 discloses the feature of having a printing device receive and process information for output (same field of endeavor). However, Clark '856 discloses using the printer firmware, the firegroup count and the offset data contained in the print header to calculate the beginning and the ending of each application of color on a page. The use of these two factors serves as a data delimiter, or ending of a color component. Specifically, in figure 7, element (714) can serve as a data delimiter between two color segments. Also, DMA interrupts are used as data delimiters since these interrupts serve as a signal to the system that another color is being introduced to the memory for output. These interrupts occur at the beginning and end of color components; see col. 5, lines 31-61, col. 6, ll. 57-67 and col. 7, ll. 3-58), and

wherein each color component data has compressed data (i.e. the system contains a header of the compressed size of the color data that is sent to the printing

device. Each of the color components that are compressed is also expanded before being printed; see col. 2, ll. 29-60).

Therefore, in view of Clark '856, it would have been obvious to one of ordinary skill at the time the invention was made to have the features a code representing an end of the first color component data and the second color component data, respectively, and wherein each color component data has compressed data, incorporated in the device of Watanabe '289, as modified by the features of Iwasaki '403, in order to contain DMA interrupts occur at the start and end of colors, which aids in the overall processing of the data (as stated in Clark '856 col. 7, lines 3-32).

Re Claim 11: The teachings of Watanabe '289 in view of Iwasaki '403 and Clark '856 are disclosed above.

Watanabe '289 discloses the apparatus according to claim 1, wherein the data acquired by the acquisition means is column data (i.e. the print buffer, which is apart of the acquisition means receives vertical or column data; see fig. 3, col. 4, ll. 6-65).

Re Claim 12: The teachings of Watanabe '289 in view of Iwasaki '403 and Clark '856 are disclosed above.

Watanabe '289 discloses the apparatus according to claim 1, wherein said acquisition means has decompression means for decompressing the color component data into raster data (i.e. the system discloses CPU1 (111, fig. 3) contains the feature of

programming that allows the controller to decompress black data, which is considered as color component data, and the decoding of this information results in a dot image or raster to be output by the printer unit; see col. 4, ll. 6-65 and col. 5, ll. 65-col. 7, ll. 12).

Re Claim 13: The teachings of Watanabe '289 in view of Iwasaki '403 and Clark '856 are disclosed above.

Watanabe '289 discloses the apparatus according to claim 12, wherein said acquisition means has conversion means for converting the raster data into the column data (i.e. the acquisition or printer unit contains elements that convert the raster data into vertical information through horizontal to vertical conversion circuit (204); see fig. 3, col. 4, ll. 6-18).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. Nohata '656 (USP 6111656) discloses an image communication apparatus that is able to acquire image data information and transfers the information within the equipment through several buffers and units for conversion before printing the image data.

8. Yamada (USP 6339480) discloses a printer driver for a color printer and the system comprises a raster to column conversion, a compression and a decompression of the raster data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHAD DICKERSON whose telephone number is (571)270-1351. The examiner can normally be reached on 9:30-6:00pm Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler Haskins can be reached on (571) 272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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